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10/595,158	03/09/2006	Hajime Kimura	12732-0325US1	3518

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EXAMINER	
ZUBAJLO, JENNIFER L	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
10/28/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/595,158	KIMURA, HAJIME	
	Examiner	Art Unit	
	JENNIFER ZUBAJLO	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/14/10 & 7/19/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-11 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jie-Farn Wu (Pub. No.: US 2005/0259054 A1).

As to claim 1, Wu teaches a semiconductor device comprising: a transistor (see fig. 7A – transistor G); a current supply means electrically connected to the transistor (see fig. 7A – current source I); and a precharge circuit comprising a first terminal electrically connected to the transistor and a second terminal (see fig. 7A – see below in response to arguments for box illustrating detail of defined precharge circuit area); wherein the precharge circuit supplies a charge to the transistor according to a comparison between a potential of the first terminal and a potential of the second terminal (see fig. 7A – note it is obvious that this comparison occurs with the op-amp 64).

As to claim 2, Wu teaches a semiconductor device according to claim 1 (see above rejection), wherein the precharge circuit comprising: a comparison control circuit

for the comparison between the potential of the first wiring and the potential of the second wiring; and a switch controlled by the comparison control circuit (see fig. 7A – see op-amp 64 and switches 62);

As to claim 3, Wu teaches a semiconductor device according to claim 2 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A – op-amp 64).

As to claim 4, Wu teaches a semiconductor device according to claim 2 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 5, Wu teaches an electronic apparatus having the semiconductor device according to claim 1 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

As to claim 6, Wu teaches a semiconductor device comprising: a transistor (see fig. 7A – transistor G); a current source electrically connected to the transistor (see fig.

7A – current source I); a charge supply means (see fig. 7A – note that the charge supply can obviously be the current source I or the Voltage Vpp); and a precharge circuit configured to supply a charge to the transistor (see fig. 7A – see below in response to arguments for box illustrating detail of defined precharge circuit area), the precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 7A – op-amp 64 and note it is obvious that the op-amp is a comparison control circuit); and a switch electrically connected the third terminal (see fig. 7A – switch 62); wherein the charge supply means is electrically connected to the transistor (see fig. 7A – both Vpp and I are electrically connected to transistor G).

As to claim 7, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the charge supply means is a current source (see fig. 7A – current source I).

As to claim 8, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the charge supply means is a power source (see fig. 7A – voltage Vpp).

As to claim 9, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A - op-amp 64).

As to claim 10, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 11, Wu teaches an electronic apparatus having the semiconductor device according to claim 6 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

As to claim 18, Wu teaches a display device comprising: a pixel (obvious for the LED display to have pixels); a transistor (see fig. 7A – transistor G); a current supply means electrically connected to the transistor (see fig. 7A – current source I); and a precharge circuit comprising a first terminal electrically connected to the transistor and a second terminal (see fig. 7A – see below in response to arguments for box illustrating detail of defined precharge circuit area); wherein the precharge circuit supplies a charge to the transistor according to a comparison between a potential of the first terminal and a potential of the second terminal, and wherein the transistor supplies a current to the pixel (see fig. 7A - note it is obvious that this comparison occurs with the op-amp 64).

As to claim 19, Wu teaches a display device according to claim 18 (see above rejection), wherein the pixel has a light emitting element, and wherein the transistor supplies a current to the light emitting element (see fig. 7A – LED 30).

As to claim 20, Wu teaches a display device according to claim 18 (see above rejection), wherein the precharge circuit comprising: a comparison control circuit for the comparison between the potential of the first wiring and the potential of the second wiring (see fig. 7A – op-amp 64); and a switch controlled by the comparison control circuit (see fig. 7A – switch 62).

As to claim 21, Wu teaches a display device according to claim 20 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A – op-amp 62).

As to claim 22, Wu teaches a display device according to claim 20 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 23, Wu teaches an electronic apparatus having the display device according to claim 18 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

3. Claims 12-17, and 24-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu Oomura (Patent No.: US 6,693,388 B2).

As to claim 12, Oomura teaches semiconductor device comprising: a transistor comprising a source electrode, a drain electrode and a gate electrode (see fig. 6 – transistor T3); a current source electrically connected to the transistor (see fig. 6 - current source Id); a charge supply means (see fig. 6 – current source Id or voltage Vr, Vdd, note that the charge supply can obviously be the current source Id or one of the voltages); and a precharge circuit configured to supply a charge to the transistor, the precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 – amp1); and a switch electrically connected the third terminal (see fig. 6 – can be any one of the transistors T1, T2, T4, or T5); wherein the gate electrode is electrically connected to any one of the source electrode and the drain electrode (see fig. 6 – transistor T3); and wherein the charge supply means is electrically connected to any

one of the source electrode and the drain electrode (see fig. 6 – transistor T3 and Id or Vdd).

As to claim 13, Oomura teaches a semiconductor device according to claim 12 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – current source Id).

As to claim 14, Oomura teaches a semiconductor device according to claim 12 (see above rejection), wherein the charge supply means is a power source (see fig. 6 – voltage Vr or Vdd).

As to claim 15, Oomura teaches the semiconductor device according to claim 12 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 16, Oomura teaches the semiconductor device according to claim 12 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 17, Oomura teaches an electronic apparatus having the semiconductor device according to claim 12 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

As to claim 24, Oomura teaches a display device comprising: a pixel (see fig. 6); a transistor electrically connected to the pixel (see fig. 6 - transistor T5 and note that it would be obvious to define the pixel in terms of just being the OLED - see below in response to arguments); a current source electrically connected to the transistor (see fig. 6 – current source Id); a charge supply means (see fig. 6 – current source Id or voltage Vr or Vdd, note that the charge supply can obviously be the current source Id or the voltage Vr or Vdd); and a precharge circuit configured to supply a charge to the transistor, the precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 – amp1); and a switch electrically connected the third terminal (see fig. 6 – T2); wherein the charge supply means is electrically connected to the transistor (see fig. 6 – T5). Note that any other combination of transistors T1, T2, T3, T4, or T5 can be used to read on this claim as transistors or switches.

As to claim 25, Oomura teaches a display device according to claim 24 (see above rejection), wherein the pixel has a light emitting element, and wherein the transistor is electrically connected to the light emitting element (see fig. 6 – OLED).

As to claim 26, Oomura teaches a display device according to claim 24 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – current source Id).

As to claim 27, Oomura teaches a display device according to claim 24 (see above rejection), wherein the charge supply means is a power source (see fig. 6 – voltage Vr or Vdd).

As to claim 28, Oomura teaches the display device according to claim 24 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 29, Oomura teaches the display device according to claim 24 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 30, Oomura teaches an electronic apparatus having the display device according to claim 24 (see above rejection), wherein the electronic apparatus is selected, from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

As to claim 31, Oomura teaches a display device comprising: a pixel (see fig. 6 and note that it would be obvious to define the pixel in terms of just being the OLED - see below in response to arguments); a transistor comprising a source electrode, a drain electrode and a gate electrode (see fig. 6 – transistor T3); a current source electrically connected to the transistor (see fig. 6 – current source Id and transistor T5); a charge supply means (current source Id or voltage Vr or Vdd, note that the charge supply can obviously be the current source Id or the voltage Vr or Vdd); and a precharge circuit configured to supply a charge to the transistor, the precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 - amp1 and T3); and a switch electrically connected the third terminal (see fig. 6 – can be any one of the transistors T1, T2, T4, or T5); wherein the gate electrode is electrically connected to any one of the source electrode and the drain electrode (see fig. 6 – T3), wherein the charge supply means is electrically connected to any one of the source electrode and the drain electrode, and wherein the pixel is electrically connected to any one of the source electrode and the drain electrode (see fig. 6 – T5, Id or Vr or Vdd).

As to claim 32, Oomura teaches a display device according to claim 31 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – Id).

As to claim 33, Oomura teaches a display device according to claim 31 (see above rejection), wherein the charge supply means is a power source (see fig. 6 – Vr or Vdd).

As to claim 34, Oomura teaches the display device according to claim 31 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 35, Oomura teaches the display device according to claim 31 (see above rejection), wherein the comparison control circuit comprises a chopper inverter comparator (see fig. 7A – and note chopper inverter comparators are obvious and well known substitutions for operational amplifiers in the art because they perform the same function).

As to claim 36, Oomura teaches an electronic apparatus having the display device according to claim 31 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop

personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

Response to Arguments

4. Applicant's arguments with respect to the Wu reference have been fully considered but they are not persuasive.

Wu teaches the recited precharge circuit (see below - note that black box outline is what is being read as the precharge circuit) and therefore does supply a charge to the transistor.

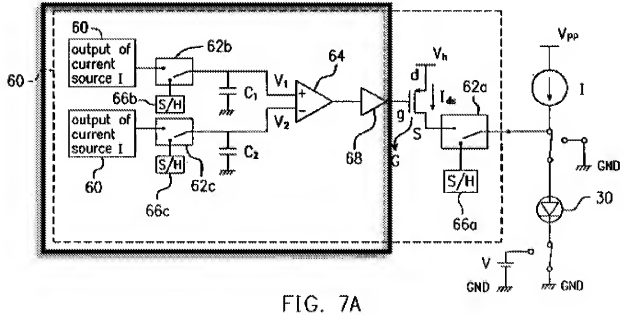


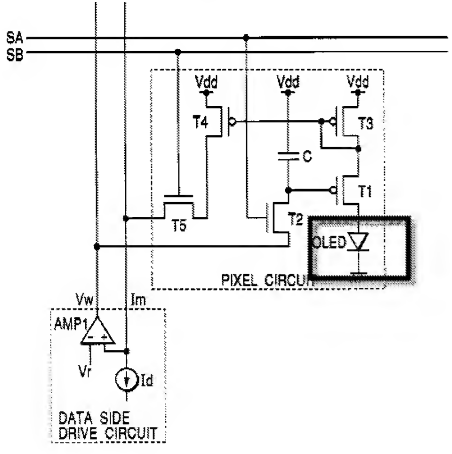
FIG. 7A

5. Applicant's arguments with respect to the Oomura reference have been fully considered but they are not persuasive.

Oomura teaches the recited transistor (see transistor T3 and also note the gate of T5 could also apply as it has an electrical connection through the drivers/bus lines to its source/drain).

Oomura teaches the transistor electrically connected to the pixel when defining the pixel comprising the OLED (see boxed area below).

FIG. 6



Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER ZUBAJLO whose telephone number is (571)270-1551. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer Zubajlo/
Examiner, Art Unit 2629
10/22/10

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629